

Table A-40. Full-time equivalent (FTE) R&D scientists and engineers per 1,000 employees in companies that performed industrial R&D in the U.S., by industry and size of company: 1999-2001

Page 1 of 3

Industry and size of company	NAICS codes	1999 ¹	2000	2001 ²
Distribution by industry:				
All industries	21-23, 31-33, 42, 44-81	57	59	63
Manufacturing	31-33	55	55	62
Food	311	8	6	8
Beverage and tobacco products	312	25	23	25
Textiles, apparel, and leather	313-16	31	9	10
Wood products	321	10	18 (S)	20 (S)
Paper, printing and support activities	322, 323	20 (S)	19 (S)	19 (S)
Petroleum and coal products	324	26	15 (S)	17 (S)
Chemicals	325	84	98	98
Basic chemicals	3251	60	71	64
Resin, synthetic rubber, fibers, and filament	3252	65	77	89
Pharmaceuticals and medicines	3254	133	136	143
Other chemicals	325 minus (3251-52, 3254)	61 (S)	77 (S)	75 (S)
Plastics and rubber products	326	24	24	27
Nonmetallic mineral products	327	15	30	27
Primary metals	331	13 (S)	13 (S)	15 (S)
Fabricated metal products	332	13	15	20
Machinery	333	60	69	72
Computer and electronic products	334	147 (S)	152 (S)	180 (S)
Computers and peripheral equipment	3341	127	135	175
Communications equipment	3342	217 (S)	195 (S)	309 (S)
Semiconductor and other electronic components	3344	141 (S)	132 (S)	148 (S)
Navigational, measuring, electromedical, and control instruments	3345	133	146	144 (S)
Other computer and electronic products.	334 minus (3341-42, 3344-45)	112	86	92
Electrical equipment, appliances, and components	335	37	44	53
Transportation equipment	336	65	53	59
Motor vehicles, trailers, and parts	3361-63	64	60	70
Aerospace products and parts	3364	72 (S)	43	41
Other transportation equipment	336 minus (3361-64)	40	38 (S)	49 (S)
Furniture and related products	337	10	9 (S)	11 (S)
Miscellaneous manufacturing	339	43	50	45
Medical equipment and supplies	3391	53	58	57
Other miscellaneous manufacturing	339 minus (3391)	29	35	28
Other manufacturing	31-33 minus (311-16, 321-27, 331-37, 339)	--	--	--

See explanatory information and SOURCE at end of table.

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Page 2 of 3

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Distribution by industry:				
Nonmanufacturing	21-23, 42, 44-81	60	65	64
Mining, extraction, and support activities	21	16	29	46
Utilities	22	2	1	2
Construction	23	52	8	15
Trade	42, 44, 45	92	76	69
Transportation and warehousing	48, 49	1	3	2
Information	51	68	75	80
Publishing	511	230	248	222
Newspaper, periodical, book, and database	5111	26	31	32
Software	5112	344	358	334
Broadcasting and telecommunications	513	14 (S)	12 (S)	(D)
Radio and television broadcasting	5131	(D)	(D)	(D)
Telecommunications	5133	(D)	(D)	11 (S)
Other broadcasting and telecommunications	513 minus (5131, 5133)	(D)	356	(D)
Other information	51 minus (511, 513)	114	95	(D)
Finance, insurance, and real estate	52, 53	20	25	26
Professional, scientific, and technical services	54	173	201	181
Architectural, engineering, and related services	5413	180	207 (S)	135 (S)
Computer systems design and related services	5415	162	174	216
Scientific R&D services	5417	348	366	378
Other professional, scientific, and technical services	54 minus (5413, 5415, 5417)	40	61	35
Management of companies and enterprises	55	65	110	34
Health care services	621-23	84	20	40
Other nonmanufacturing	56, 61, 624, 71, 72, 81	7	8	18

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Page 3 of 3

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Distribution by size of company: [Number of employees]				
Total		57	59	63
5 to 24		249	295	277
25 to 49		144	179	166
50 to 99		163	111	106
100 to 249		81	94	106
250 to 499		68	79	90
500 to 999		82	92	79
1,000 to 4,999		58	49	67
5,000 to 9,999		58	59 (S)	61 (S)
10,000 to 24,999		37	56	62
25,000 or more		45	46 (S)	46 (S)

¹ Some statistics for 1999 have been revised since originally published.

² Beginning with 2001, statistics for total and Federally funded industrial R&D exclude data for Federally Funded Research and Development Centers (FFRDCs).

KEY: (D) = Data have been withheld to avoid disclosing operations of individual companies.
(S) = Indicates imputation of more than 50 percent.
(--) = Indicates data not collected.

NOTES: For 1999, 2000, and 2001, the frame from which the statistical samples were selected was divided into two partitions based on total company employment. In the manufacturing sector, companies with employment of 50 or more were included in the large company partition. In the nonmanufacturing sector, companies with employment of 15 or more were included in the large company partition. Companies in the respective sectors with employment below these values, but with at least 5 employees, were included in the small company partition. The purpose of partitioning the sample this way was to reduce the variability in industry estimates largely attributed to the random year-to-year selection of small companies by industry and the high sampling weights that sometimes were assigned to them. Because of this, in prior years detailed industry statistics were published only from the large company partition; detailed industry statistics from the small company partition were not. Statistics from the small company partition were included in the manufacturing, nonmanufacturing, and all industries totals, but were aggregated into "small manufacturing" and "small nonmanufacturing" classifications instead of being included in their respective industry classifications. For this report, this practice was evaluated and discontinued because it was determined that the data for small companies are more useful if they are included in their respective industries even given the sampling concerns described above. Consequently, the "small manufacturing" and "small nonmanufacturing" stublines are no longer present. For 1999 and 2000, statistics previously published for the firms in the small company classifications are not shown separately in this table, but are included in the manufacturing, nonmanufacturing, and all industries totals. For more information, see the technical notes in Survey of Industrial Research and Development Methodology: 2001 at <http://www.nsf.gov/sbe/srs/sird/start.htm>

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Industrial Research and Development: 2001